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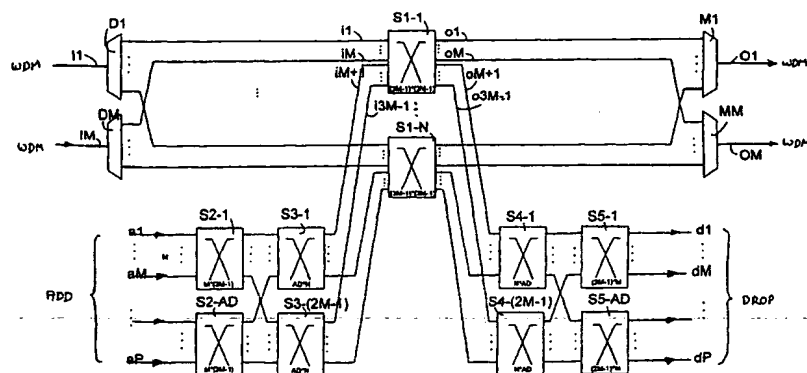
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(54) Title: **OPTICAL CROSS-CONNECTOR CONTAINING A MULTI-STAGE CLOS NETWORK IN WHICH A SINGLE-STAGE MATRIX COMPRISES ONE STAGE OF THE CLOS NETWORK**



(57) Abstract: A wavelength division multiplex (WDM) optical cross-connector (OXC) has a plurality ($N \times M$) of input and output channels ($i1$ to iM ; $o1$ to oM) for through traffic. A first group of optical switching matrices ($S1-1$ to $S1-N$) is provided for connecting the through traffic input channels ($i1$ to iM) to the output channels ($o1$ to oM), wherein each through traffic input channel ($i1$ to iM) is connected to an input of a switching matrix ($S1-1$ to $S1-N$) of the first group and each through traffic ($o1$ to oM) is connected to an output of the switching matrix ($S1-1$ to $S1-N$). Additionally a plurality (P) of input channels ($a1$ to aP) and/or output channels ($o1$ to oP) is provided for adding/dropping traffic. Each add/drop input/output channel ($a1$ to aP , $o1$ to oP) is connected to an input/output of a second group of switching matrices ($S2-1$ to $S2-AD$). The outputs/inputs of the second group of switching matrices are connected to inputs of a third group of switching matrices ($S3-1$ to $S3-(2M-1)$) or outputs of a fourth group of switching matrices ($S4-1$ to $S4-(2M-1)$) and the outputs/inputs of the third/fourth group of switching matrices are connected to inputs/outputs of the first group of switching matrices such that the switching matrices of the second, third and first groups of the first, fourth and second groups each form a Clos network.

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